

TENTATIVE

TOSHIBA PHOTOCOUPLER GaAs LED + PHOTO-TRIAC + TRIAC

TLP3566, TLP3567

INVERTER FOR AIR CONDITIONER
HOUSEHOLD USE EQUIPMENT
VENDING MACHINE
GAME MACHINE
AC-OUTPUT MODULE

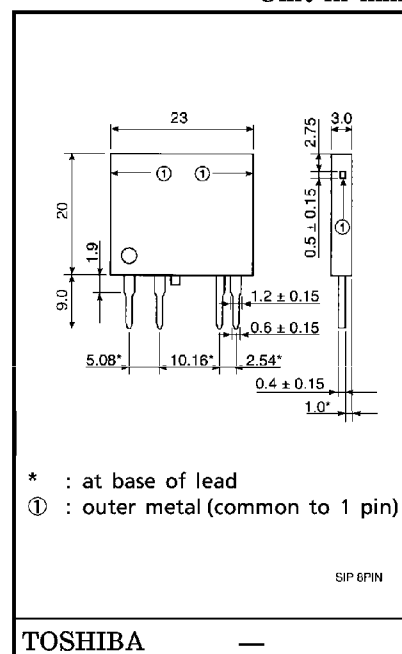
Unit in mm

The TOSHIBA TLP3566 series consist of a GaAs infrared LED optically coupled to photo-triac and main triac in a 4 pin plastic SIP.

TLP3566 : Non Zero Crossing Type

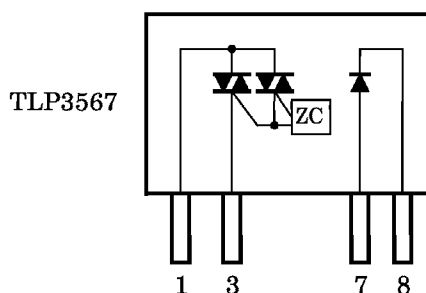
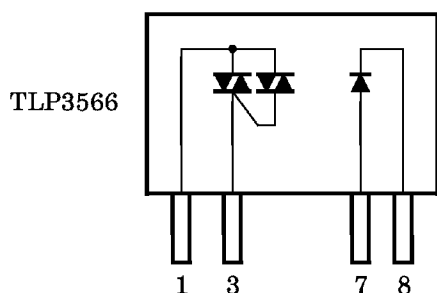
TLP3567 : Zero Crossing Type

- Peak Off-State Voltage : 600V (MIN.)
- Trigger LED Current
 - TLP3566 : 15mA (MAX.)
 - TLP3567 : 10mA (MAX.)
- On-State Current : 2Arms (MAX.) @Ta = 40°C
- Isolation Voltage : 2500Vrms (MIN.)
- Nonrepetitive Surge Current : 12A peak @1cycle (MAX.)
- Isolation Creepage Path : 6.4mm (MIN.)
- Distance Between T1 and T2 : 3.5mm (MIN.)
(5.08mm Pitch)
- T_{stg} : -40~125°C
- T_{opr} : -30~85°C



Weight : 3.6g

PIN CONFIGURATION (TOP VIEW)



- 1 : TRIAC T2
- 3 : TRIAC T1
- 7 : LED ANODE
- 8 : LED CATHODE

961001EBC2

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- Gallium arsenide (GaAs) is a substance used in the products described in this document. GaAs dust and fumes are toxic. Do not break, cut or pulverize the product, or use chemicals to dissolve them. When disposing of the products, follow the appropriate regulations. Do not dispose of the products with other industrial waste or with domestic garbage.
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MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
LED	Forward Current	I _F	50	mA
	Forward Current Derating (Ta ≥ 25°C)	ΔI _F / °C	-0.5	mA / °C
	Peak Forward Current (100μs pulse, 100pps)	I _{FP}	1	A
	Reverse Voltage	V _R	5	V
	Junction Temperature	T _j	125	°C
DETECTOR	Off-State Output Terminal Voltage	V _{DRM}	600	V
	On-State RMS Current	I _T (RMS)	2.0	A
			1.5	
	On-State Current Derating (Ta ≥ 40°C)	ΔI _T / °C	-25	mA / °C
	Peak Current from snubber Circuit (100μs Pulse, 120pps)	I _{SP}	2	A
	Peak Nonrepetitive Surge Current (50Hz, peak)	I _{TSM}	12	A
	Junction Temperature	T _j	120	°C
Storage Temperature Range		T _{stg}	-40~125	°C
Operating Temperature Range		T _{opr}	-30~85	°C
Lead Soldering Temperature (10s)		T _{sol}	260	°C
Isolation Voltage (AC, 1min., R.H. ≤ 60%) (Note 1)		BV _S	2500	V _{rms}

(Note 1) Device considered a two-terminal device : Pins 1 and 3 shorted, and pins 7 and 8 shorted together.

RECOMMENDED OPERATING CONDITIONS

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V _{AC}	—	—	240	V _{ac}
Forward Current	I _F	15	20	25	mA
Peak Current from Snubber Circuit	I _{SP}	—	—	1	A
Operating Temperature	T _{opr}	-30	—	85	°C

INDIVIDUAL ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
LED	Forward Voltage	V_F	$I_F = 10\text{mA}$	1.0	1.15	1.3	V
	Reverse Current	I_R	$V_R = 5\text{V}$	—	—	10	μA
	Capacitance	C_T	$V = 0, f = 1\text{MHz}$	—	30	—	pF
DETECTOR	Peak Off-State Current	I_{DRM}	$V_{\text{DRM}} = 600\text{V}, T_a = 110^\circ\text{C}$	—	—	100	μA
	Peak On-State Voltage	V_{TM}	$I_{\text{TM}} = 1.5\text{A}$	—	—	3.0	V
	Holding Current	I_H	$R_L = 100\Omega$	—	—	25	mA
	Critical Rate of Rise of Off-State Voltage	dv/dt	$V_{\text{in}} = 400\text{V}$	200	500	—	$\text{V}/\mu\text{s}$
	Critical Rate of Rise of Commutating Voltage	$dv/dt(c)$	$I_T = 1.0\text{A}$ $V_{\text{in}} = 240\text{Vrms}$	—	5	—	$\text{V}/\mu\text{s}$

COUPLED ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Trigger LED Current	I_{FT}	$V_T = 6\text{V}$	TLP3566	—	—	15	mA
			TLP3567			10	
Inhibit Voltage (Note 2)	V_{IH}	$I_F = \text{Rated } I_{\text{FT}}$		—	—	50	V
Leakage in Inhibited State (Note 2)	I_{IH}	$I_F = \text{Rated } I_{\text{FT}}$ $V_T = \text{Rated } V_{\text{DRM}}$		—	400	—	μA
Capacitance (Input to Output)	C_S	$V_S = 0, f = 1\text{MHz}$		—	1.5	—	pF
Isolation Resistance	R_S	$V_S = 500\text{V}, \text{R.H.} \leq 60\%$		—	10^{14}	—	Ω
Isolation Voltage	BV_S	AC, 1 minute		2500	—	—	Vrms
		AC, 1 second, in oil		—	5000	—	
		DC, 1 minute, in oil		—	5000	—	Vdc

(Note 2) Applicable to TLP3567

